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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,651	11/20/2000	Samir N. Hulyalkar	SDC-100	8383

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RATNERPRESTIA  
P O BOX 980  
VALLEY FORGE, PA 19482-0980

EXAMINER

PHU, PHUONG M

ART UNIT	PAPER NUMBER
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2631

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DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

TS

**Office Action Summary**

Application No.

09/716,651

Applicant(s)

HULYALKAR ET AL.

Examiner

Phuong Phu

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 November 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2                      6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Information Disclosure Statement*

1. Regarding to the IDS filed on 11/20/02, the examiner has not received copies of references cited under section OTHER DOCUMENTS. The applicant is now requested to provide copies of these references.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites the limitation “the partial decoding of each sample value is... **based on a previously decoded sample value** of the successive sample values” on lines 7-10. This limitation is not disclosed in the specification.

Claims 7, 12, 22 recite the limitation “a partial trellis decoder that generates ... **based on a previously decoded symbol**” on lines 7-9 (claim 7), lines 15-17 (claims 12, 22, 23). This limitation is not disclosed in the specification.

Claims depended on above claims are therefore also rejected.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 7-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "A decoder and quantizer that may be used to recover N-bit symbols" on lines 1-2. The language "may be used to recover N-bit symbols" is not definite to indicate whether the "decoder and quantizer" are necessary to be used to recover N-bit symbols.

Claims depended on above claims are therefore also rejected.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willming (5,923,711) in view of Baker et al (5,802,116).

As per claim 1, see figures 2-7 and col. 4, line 38 to col. 10, line 33, Willming discloses a method comprising:

step (see figure 5) for dividing a set of code values ( $Z_2Z_1Z_0$ ) into a plurality of subsets (a, b, c, d), each subset including a plurality of values (Relative Amplitude); and

step (40, 82) (see figure 4) for decoding and quantizing each sample value of successive sample values to assign the sample value to one of the subsets (see col. 9, lines 21-28, and col. 10, lines 34-44).

Willming does not disclose whether each sample value is decoded based on a previously decoded sample value. Baker et al discloses a Viterbi decoder which decodes each sample value of successive sample values based on a current sample value of the successive sample values and on a previously decoded sample value (see figure 2, and col. 4, line 14 to col. 6, line 53). On the other hand, Willming discloses that step (40, 82) uses a Viterbi decoder (82) for decoding samples values, however, he does not disclose, in detail, how the Viterbi decoder (82) is implemented. Therefore, as an application, it would have been obvious for one skilled in the art, when carrying out Willming method, to implement the Viterbi decoder (82) in such a way that the Viterbi decoder would decode sample value of successive sample values based on a current sample value of the successive sample values and on a previously decoded sample value, as taught by Baker et al.

As per claims 2, 3, Willming in view of Baker et al discloses that the sample values are trellis encoded (see Willming, figure 3); and he further discloses step of calculating path metrics for the current sample responsive to the path metrics calculated for the previously decoded, and using the calculated metrics to calculate a most likely path metric of the current sample value (see Baker et al, figures 3 and 4, and col. 4, line 40 to col. 6, line 22).

As per claim 4, Willming in view of Baker et al discloses that the trellis code can define a state-transition diagram in which a change from the previous sample value to the current sample value represents a transition in the state diagram and every state in the state transition diagram is

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associated with a path metric, and he further discloses step of selecting a most likely transition in the state transition diagram from any state corresponding to the previous sample value to a specific state of the current sample value (see Baker et al, figure 5, and col. 6, lines 23-46).

As per claims 5 and 6, in Willming in view of Baker et al, the trellis encoded sample values corresponds to a convolution code (see Willming , figure 3).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 703-308-0158. The examiner can normally be reached on M-F (8:30-6:00) First Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

*Phuong Phu*

Phuong Phu  
12/02/03

Phuong Phu  
Primary Examiner  
Art Unit 2631

**PHUONG PHU  
PRIMARY EXAMINER**